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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/263,068 | 03/08/1999 | BORIS PECHENY | 50277-164 | 1360 |

7590 05/07/2003
DITTHAVONG & CARLSON, P.C.
10507 BRADDOCK RD
SUITE A
FAIRFAX,, VA 22032

EXAMINER

FLEURANTIN, JEAN B

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2172

DATE MAILED: 05/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/263,068

Applicant(s)

PECHENY, BORIS

Examiner

Jean B Fleurantin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 and 30 is/are allowed.
- 6) ☒ Claim(s) 1-5, 16-20 and 31-36 is/are rejected.
- 7) ☒ Claim(s) 6-14 and 21-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This is in response to the Request for Continuation Examination filed 04/07/2003.
2. Claims 1-36 are remained pending for examination.

Response to Applicant' Remarks

3. Applicant's arguments submitted on 04/07/2003 with respect to claims 1, 16, 31, 32 and 35 have been fully considered but, have been found persuasive only to the extent that the prior art of record does not specifically teach the limitations "associate with respective key lengths and configured to hold respective maximum numbers of entries based on the respective key lengths." However, Rangarajan teaches such limitations.

In response to Applicant's argument on page 13, that "the hash tables is configured to hold a different number of key values than at least another one of the hash tables," does not include certain features of Applicant's invention, the limitations on which the Applicant relies (the hash tables is configured to hold a different number of key values than at least another one of the hash tables) are not stated in the claims 1, 16, 31, 32 and 35. It is the claims that define the claimed invention, it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.*, 7 USPQ2d 1064.

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 16-20 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US Pat. No. 5,774,588) in view of Rangarajan et al. (US Pat. No. 5,706,365) ("Li"), ("Rangarajan").

As per claims 1, 16 and 35, Li teaches a method of searching for a string in a lexical cache (thus, comparing the representation of the unverified string with representations of only those lexicon entries that are commonly indexed to a selection of the buckets to which the unverified string is indexed; which is readable as searching for a string in a lexical cache)(see col. 2, lines 61-65), as claimed comprises the computer implemented steps of generating a key based on the string (thus, the step of indexing the entries preferably comprises determining a set of group numerical values; which is readable as generating a key based on the string)(see col. 3, lines 8-11);

searching the lexical container for an entry associated with the string based on the key (thus, a pointer 42 to the signature vector's entry 45 in the lexicon is stored in a bucket 43 associated with the bucket address equal to the decimal number of the group; which is readable as searching the lexical container for an entry associated with the

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string)(see col. 8, lines 2-4). But, Li does not explicitly indicate a length of the key, and wherein at least one of the lexical containers is configured to hold a different maximum number of entries than at least another one of the lexical containers. However, Rangarajan implicitly indicates the page indexing module 127 then creates the word key for the word this includes determining 1011 the number k of n-grams for the word, the number k of n-grams for the word key is length of the word-2; which is readable as a length of the key, (see col. 12, lines 38-48), the page key offset 511 is a offset to the start of the variable length page key 509 corresponding to the table entry, the page key size 513 is the total number of the bytes in the corresponding page key 509 including all the entries for n- gram and k values; which is readable as wherein at least one of the lexical containers is configured to hold a different maximum number of entries than at least another one of the lexical containers, (see col. 9, lines 30-34). Further, in column 6, lines 11 through 12, Rangarajan teaches the document list 225 stores a variable number of entries 311 up to maximum limit. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Li and Rangarajan with a length of the key, and wherein at least one of the lexical containers is configured to hold a different maximum number of entries than at least another one of the lexical containers. This modification would allow the teachings of Li and Rangarajan to improve the performance of the lexical cache, and provide an indexing system that allows indexed documents to efficiently added or removed from the system for searching without substantial overhead for reindexing (see col. 2, lines 13-16).

As per claims 2, 4, 17 and 19, Li teaches a method as claimed, wherein steps of generating a key based on the string includes the step of compressing the string to

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produce the key (thus, indexing of the lexicon entries produces a fixed result for a given lexicon; which is readable as generating a key based on the string includes the step of compressing the string to produce the key)(see col. 3, lines 27-28).

As per claims 3 and 18, Li teaches a method as claimed, wherein steps of compressing the string to produce the key includes the step of performing an n-gram compression on the string (thus, partitioning a representation of an entry comprises forming an n-gram vector representing the entry folding the n-gram vector into a signature vector of reduced bit length; which is readable as wherein the step of compressing the string to produce the key includes the step of performing an n-gram compression on the string)(see col. 3, lines 1-4); Further, in column 14, lines 49 through 50, Li teaches folding said n-gram vector into a signature vector by combining multiple n-gram into bits.

As per claims 5 and 20, the limitations of claims 5 and 20 are rejected in the analysis of claim 1, and these claims are rejected on that basis.

As per claims 31 and 32, in addition to the discussion in claim 1, Li teaches storing the string in an entry in the lexical container based on the key (see col. 6, lines 42-46).

As per claims 33 and 34, in addition to the discussion in claim 1, Li further teaches the first lexical container is configured to hold more entries than the second lexical container (thus, a second portion of the lexicon comprising some of the entries of the first portion by directly comparing an encoded representation of the unverified string with encoded representations of the entries of the first portion of the lexicon, which is

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readable as the first lexical container is configured to hold more entries than the second lexical container)(see col. 4, lines 29-33).

As per claim 36, the limitations of claim 36 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

Allowable Subject Matter

5. Claims 6-14 and 21-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is an examiner's statement of reasons for allowance:

As per claims 15 and 30, the present application has been thoroughly reviewed. Upon extensive diverse databases searches, and a full review of applicant arguments, the examiner deems that the claimed features "each of said sequences of slots corresponding to a respective hash value and a number of the slots being based on a respective key length, wherein at least one of the hash tables is configured to hold a different number of slots than at least another one of the hash tables" in conjunction with other elements of the claims would not be found anticipated or obvious over the prior art made of record.

Conclusion

7. Any inquiry concerning this communication from examiner should be directed to Jean Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday through Friday from 7:30 A.M. to 6:00 P.M.

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If any attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Mrs. KIM VU can be reached at (703) 305-8449. The FAX phone numbers for the Group 2100 Customer Service Center are: *After Final* (703) 746-7238, *Official* (703) 746-7239, and *Non-Official* (703) 746-7240. NOTE: Documents transmitted by facsimile will be entered as official documents on the file wrapper unless clearly marked "**DRAFT**".

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2100 Customer Service Center receptionist whose telephone numbers are (703) 306-5631, (703) 306-5632, (703) 306-5633.



Jean Bolte Fleurantin

April 30, 2003

JBF/



JEAN M. CORRIELUS
PRIMARY EXAMINER